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## Patent Abstracts of Japan

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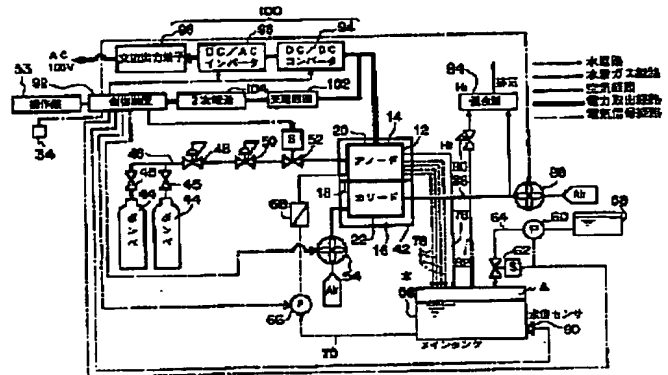
APPLICATION DATE : 21-01-98  
APPLICATION NUMBER : 10009522

APPLICANT : SANYO ELECTRIC CO LTD;

INVENTOR : HATAYAMA RYUJI;

INT.CL. : H01M 8/04

TITLE : FUEL CELL APPARATUS



ABSTRACT : PROBLEM TO BE SOLVED: To avoid freezing of water that circulates inside a solid polymer fuel cell, even if it is installed in a low-temperature environment.

SOLUTION: A control device 92 sets a freeze proofing mode by an operation mode switching signal from a control panel 33. When setting the freeze proofing mode, if the ambient temperature of the apparatus is identified as being a fixed threshold or lower according to a detected signal from a temperature sensor 34, the control device 92 causes a fuel cell 42 to generate a quantity of heat corresponding to the ambient temperature through the control drive and stopping of the fuel cell 42. The heat generated from the fuel cell 42 moves to circulation water and heat up the water, which circulates between the fuel cell 42 and a main water tank 56 using a pump 66. Thereby, the freezing of the circulation water is prevented by keeping it at a temperature higher than the freezing point, even if the ambient temperature of the apparatus is 0°C or lower.

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